

Claims

1. A method for providing a hole into a valve component having an internal cavity,  
5 said method comprising the steps of filling and sealing a fluid within said cavity; and  
laser drilling the hole through the component into the internal cavity.
2. A method for providing a hole according to claim 1, wherein the valve component is a  
valve stem.
- 10 3. A method of manufacturing a valve stem, said method comprising the steps of :
  - a) providing a valve stem work-piece having a passageway with an outlet;
  - b) filling the passageway with a fluid;
  - c) sealing the outlet;
  - 15 d) laser drilling a side port through the work-piece into the passageway;
  - e) unsealing the outlet.
- 20 4. A method of manufacturing a valve stem according to claim 3, wherein the valve stem  
is plastic and the valve stem work-piece is provided by molding, in particular by  
injection thermoplastic molding.
- 25 5. A method of manufacturing a valve stem according to claim 3, wherein the valve stem  
is plastic and the step of providing a valve stem work-piece includes the steps:
  - i) providing a valve stem blank having one or more exterior contours of the valve stem  
by molding, in particular by injection thermoplastic molding; and
  - ii) forming the passageway and outlet by drilling.
6. A method of manufacturing a valve stem according to claim 3, wherein the valve stem  
is metal and the valve stem work-piece is provided by machining and/or cold forging.

7. A method of manufacturing a valve stem according to claim 3, wherein the valve stem is metal and the step of providing the valve stem work-piece includes the steps:

5      i) providing a valve stem blank having one or more exterior contours of the valve stem by machining and/or cold forging;

ii) forming the passageway and outlet by drilling.

8. A method of manufacturing a valve stem according to claim 5 or claim 7, wherein the passageway and outlet are formed by laser drilling.

10     9. A method of manufacturing a valve stem according to claim 3, wherein the valve stem is metal and the valve stem work-piece is provided by deep drawing.

15     10. A method of manufacturing a valve stem according to claim 9, wherein the method further comprises the steps

15      f) inserting into the passageway a plug, such that a portion of the interior of the passageway between the closed end of the valve stem and the side port is sealed off; and

15      g) curling outlet end of the stem inwardly, wherein the step (f) of inserting the plug is performed either before step b) or after step e) and wherein the step (g) of curling the outlet end is performed either before step b) or after step e), but after inserting the plug.

20     11. A valve stem obtainable according to the method of any one of claims 2 to 10.

25     12. A valve stem obtained according to the method of any one of claims 2 to 10

13. A metered dose valve comprising a valve stem according to claim 11 or claim 12.

14. A metered dose dispenser comprising a valve stem according to claim 11 or claim 12.